

CLAIMS

We Claim:

- 5 1. An interface mechanism for interfacing at least an associated component of a capillary cartridge to at least an external component that makes available a support element required by a bio-analytical process for a bio-sample, comprising:
- a support structure supporting the cartridge in relation to the external component;
- at least one biasing device supported by the support structure, the biasing device
- 10 supporting and biasing the external component against the associated component of the capillary cartridge, thereby making the support element available to the cartridge to conduct the bio-analytical process.
2. The interface mechanism as in claim 1, wherein the biasing device comprises a
- 15 compliant member supporting and biasing the external component against the associated component of the capillary cartridge when the capillary cartridge is supported by the support structure.
3. The interface mechanism as in claim 2, wherein external component makes available
- 20 incident radiation.
4. The interface mechanism as in claim 1, wherein the biasing device comprises an actuator operatively coupled to the external component.

5. The interface mechanism as in claim 4, wherein the actuator comprises at least one of a pneumatic actuator, a electromechanical actuator, and a mechanical actuator.

5 6. The interface mechanism as in claim 5, further comprising a source of compressed gas operatively coupled to the pneumatic actuator.

7. The interface mechanism as in claim 5, wherein the actuator further comprises a compliant member biasing the external component against the associated component of
10 the capillary cartridge.

8. The interface mechanism as in claim 1, wherein the external component is associated with a support element comprising at least one of electrical power, a pressurized gas, incident radiation, detection optics.

15 9. The interface mechanism as in claim 1, wherein the capillary cartridge comprises multiple separation channels, and wherein the support structure supports the capillary cartridge in relation to a plurality of external components, wherein each external component is associated with a support element, and at least one external component
20 being associated with each separation channel.

10. The interface mechanism as in claim 9, wherein the support element associated with each external component comprises at least one of electrical power, a pressurized gas, excitation radiation, detection optics.

5 11. The interface mechanism as in claim 9, wherein a plurality of external components are associated with each separation channel, the plurality of external components are associated with a plurality of support elements, including at least electrical power, a pressurized gas, incident radiation and detection optics for each separation channel.

10 12. The interface mechanism as in claim 9, wherein at least one support element is made available by an external component that is separate from other external components associated with similar support element made available to other separation channels.

15 13. The interface mechanism as in claim 12, wherein the external component makes available to the associated component of the capillary cartridge, at least one of incident radiation, detection optics, and electrical power.

20 14. The interface mechanism as in claim 9, wherein at least one of the plurality of external components is associated with an associated component of the capillary cartridge which is common to the plurality of separation channels.

15. The interface mechanism as in claim 14, wherein said at least one external component makes available to the associated component of the capillary cartridge, at least one of a high voltage and a pressurized gas.

5 16. The interface mechanism as in claim 1, wherein the support structure comprises a location device and an actuator that biases the location device against the capillary cartridge to positively position the capillary cartridge in relation to the external component.

10 17. The interface mechanism as in claim 16, wherein the interface mechanism further comprises a controller controlling operation of the biasing device and the location device, wherein the controller is configured to activate the location device to positively position the capillary cartridge prior to activating the biasing device to bias the external device against the associated component of the capillary cartridge.

15 18. The interface mechanism as in claim 1, wherein the support structure is provided with a cooling conduit operatively coupled to the capillary cartridge to direct cooling air to the capillary cartridge.

20 19. A bio-analytical system for conducting a bio-analytical process for a bio-sample in a capillary cartridge, comprising:

a support for a sample;

an interface mechanism for interfacing the capillary cartridge to a support element required by the bio-analytical process, comprising:

at least an external component that makes available the support element required by the bio-analytical process;

5 a support structure supporting the cartridge in relation to the external component and the sample;

at least one biasing device supported by the support structure, the biasing device supporting and biasing the external component against an associated component of the capillary cartridge, thereby making the support element
10 available to the cartridge to conduct the bio-analytical process; and

a controller controlling the bio-analytical process in the capillary cartridge, including controlling operation of the interfacing mechanism.

20. The bio-analytical system as in claim 19, wherein the interface mechanism comprises
15 all the optics in the system.